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Electronic Weight-and-Dimensional-Data Entry in a Computer Database

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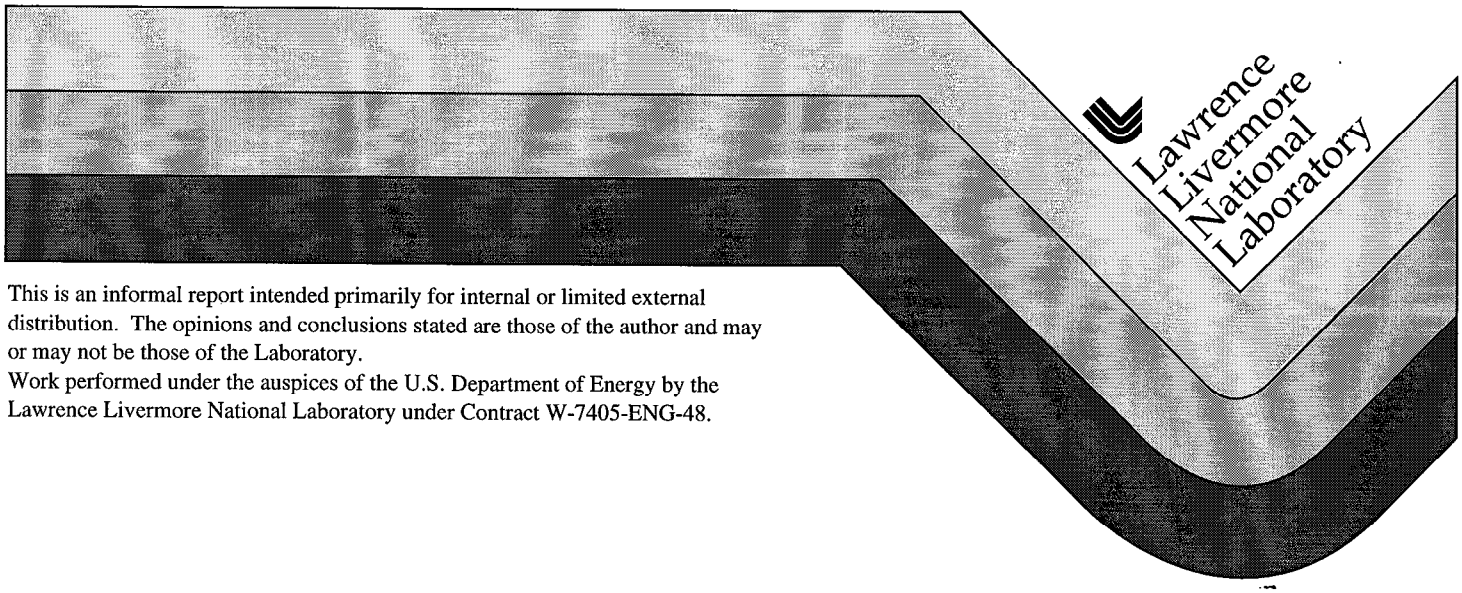

University of California Lawrence Livermore National Laboratory **YUCCA MOUNTAIN PROJECT** **Technical Implementing Procedure**	No.: TIP-CM-03 Revision: 0 Effective Date: Page: 1 of 6
Subject: Electronic Weight-and-Dimensional-Data Entry in a Computer Database	**AUTHOR:** J. Estill

Training Required: Yes ■ No ☐
Comments:
Training required for personnel performing work to this TIP.

REVISION HISTORY

Rev. No.	CN No.	Effective Date	Description of Revision/CN
0		07/02/96	Initial Issue

Approved by: _____ (for) 7/2/96
CRWMS LLNL Manager Date

Approved by: _____ 7-2-96
M&O LLNL Quality Assurance Manager Date

Approved by: R. Daniel McCright 2 July 1996
Technical Area Leader Date

1.0 PURPOSE

The purpose of this technical implementing procedure (TIP) is to describe the procedure used to obtain dimensional and weight information for test specimens and enter that data into an electronic database. This work will be conducted pursuant to Activity E-20-50, "Long-Term Corrosion Studies," which is an activity in the Scientific Investigation Plan (SIP) "Metal Barrier Selection and Testing" (SIP-CM-01, WBS # 1.2.2.5.1).

2.0 SCOPE

This TIP applies to Activity E-20-50, "Long-Term Corrosion Studies," and it pertains to weighing and measuring of specimens, and the storage of that data in an electronic database. Data is stored in the electronic database "Microsoft Access." Data is entered by electronic data transfer from a digital caliper (Fowler Ultra-Cal Mark III) and an electronic analytical balance (Mettler AT200).

3.0 RESPONSIBILITIES

The Principal Investigator (PI) or designee is responsible for the conduct of the activities and methods described in this procedure, and for maintaining electronic recording media.

The Technical Area Leader (TAL) is responsible for verifying that this procedure meets the objectives of the SIP "Metal Barrier Selection and Testing" (SIP-CM-01, WBS # 1.2.2.5.1), and the Activity Plan for E-20-50, "Long-Term Corrosion Studies."

The YMP Quality Assurance Manager is responsible for monitoring the implementation of this TIP and for assuring the continuing effectiveness of the applicable controls.

4.0 EQUIPMENT (Hardware)

All of the following equipment are electrically connected.

A. A 486-based personal computer or equivalent or a better one

B. Iomega JAZ SCSI Drive Model # V1000S; S/N W20G150425

C. (a) Percon PT2000 Barcode Reader Model 40-000-00; S/N P0025403
(b) Percon PT2000 Barcode Reader Model 40-002-00; S/N 0026240

D. Fowler Ultra-Cal Mark III Digital Caliper; S/N DCAL-01

E. Mettler AT200 Analytical Balance; S/N 1114463500

5.0 EQUIPMENT (Software)

A. Microsoft Windows NT Program Manager, Version 3.51 (Build 1057)

B. Microsoft Office Pro for Windows 95. The database software Microsoft Access Version 7.0 is included in this package (Product ID 38297-425-0639953-29211).

C. TAL Technologies, Inc., Software Wedge, Version 3.0a - Professional; barcode reader software

D. Gage Talker Corporation Fowler GPWorks Software, Version 1.05.01;

E. Fowler Model Digital Gageport NT GP2104NT/FOW, Version 2.3 Hardware D; serial interface for communication of balance and caliper with the computer.

6.0 SOFTWARE ACTIVATION AND DATA TRANSMITTAL PROCEDURES

A. Activation of computer

1. Enter <Ctrl> <Alt> <Del>.
2. Enter Password.

B. Activation of bar code reader software

1. In Program Manager in Windows NT open "Software Wedge 3.0" (double click on icon)
2. Open "WinWedge Pro 3.0" (e.g. by double clicking)
3. Activate "Open" in the pull down menu FILE
4. Open file "ICTF.cfg" (e.g. by double clicking)
5. Activate "Normal Mode" in pull down menu ACTIVATE (do not close file)

C. Activation of database software

1. Click on icon Key on desktop to enter Microsoft ACCESS Database (upper right corner of monitor).
2. Open file "ICTFDB.mdb".
3. Select table in database for use
   For example there are tables for balance calibration, caliper calibration, and pre-test specimen properties.

D. Caliper operation

1. Turning caliper off/on: depress right front button for > 2 sec
2. Change caliper mode: depress left front button for > 2 sec
3. Mode 1 (display shows: "mm" or "inch" in lower left and "set" in lower right)

   a. zeroing: depress right front button briefly (< 1sec)
   b. changing units: depress left front button briefly

4. Mode 2 (display shows: "REF1" in upper left)

   a. data transfer to computer: depress right front button briefly (<1sec)

E. Analytical balance operation

1. Zeroing: re-zero the balance by pressing the "Re-Zero" key on the balance. The draft shield closes and the balance will zero itself. The balance beeps, and then the draft shield opens when zeroing is complete.
2. To transmit data to computer, press "Print" button (draft shield closes, balance stabilizes, specimen's weight is determined, data transmits and draft shield opens)

F. Percon P2000 Barcode Reader operation

1. Turn on by pressing Green I/O button.
2. Activated by depressing trigger of barcode reader (grey button on right or left side). Beep signals that the barcode has been read.

7.0 DATA ENTRY PROCEDURE

The user will perform the operations identified in Section 6.0 that are necessary to ready the system for data entry into a table. Before a user enters data into the database, it is required that the caliper and the analytical balance be calibrated. The calibration of the caliper and balance will be rechecked upon completion of the measurements.

A. Calibrate balance and caliper (see TIP-CM-04 and TIP-CM-05, respectively)

1. Open appropriate calibration table in database "ICTFDB.mdb" (e.g. by double clicking)
2. Follow procedures in TIP-CM-04 and TIP-CM-05 for calibration procedures.

B. Specimen measuring and weighing

1. Open the appropriate table for specimen data entry. For example, to enter pre-test crevice corrosion specimen data, double click on table "Pre-Test Crevice Corrosion Specimen Dimensions."
2. Tab over 2 columns to specimen identification column and down to next empty row. NOTE: If your name is not at bottom of column 2, you must change this column to your name as the default user. Go to design view and click on "person taking measurement" field. Please your name within quotations in default value field at bottom of screen. Return to data sheet view.

3. Activate Barcode Reader to read the barcode placed on the outside of the bag containing specimen. A beep signifies acceptable barcode operation. Cursor automatically tabs to next column (length data) after entering specimen identification.

4. Measure, in the following order, the length, width, and thickness of the specimen. (NOTE: thickness only required for u-bend table)

   a) Open caliper about 0.5 inches wider than the dimension to be measured.
   b) Close the caliper on the specimen.
   c) Activate data entry into database by depressing the lower right button on the caliper in Mode 2. The cursor automatically tabs to next column.

5. Weigh the specimen. (NOTE: u-bend table does not require weight data)

   a) Ensure that the balance is zeroed; re-zero if necessary.
   b) Place the specimen on the balance
   c) Press "Print" button (draft shield closes, balance stabilizes, specimen's weight is determined, data transmits and draft shield opens). The weight is entered into the database, and the cursor advances to the next row.

6. Repeat steps 2 though 5 for next specimen.

Note: To re-enter data into any cell in the database: place the cursor in the appropriate cell, highlight existing data, and repeat the required procedure.

C. Check Calibration of balance and caliper (see TIP-CM-04 and TIP-CM-05, respectively)

   1. Open appropriate calibration table in database "ICTFDB.mdb" (e.g. by double clicking)
   2. Follow procedures in TIP-CM-04 and TIP-CM-05 for calibration procedures.

8.0 DATA ARCHIVAL

Database must be backed up upon completion of a day's entries using following procedure.

A. In Program Manager, click on file manager

   1. Go to *C:WINNT35 Personal* directory in C drive
   2. Go to pull down menu *WINDOW*

      a. enter *NEW WINDOW*
      b. enter *D* drive
      c. re-enter *C* drive
      d. highlight *ICTFDB.dbf* in *C:WINNT35 Personal* directory
      e. drag to *D* drive area and accept yes to copy.
      f. Close file manager

Place Iomega JAZ diskette under lock and key in another building for archival.

9.0 TRAINING

Personnel responsible for measuring and weighing specimens for Activity E-20-50 shall be trained to this TIP.

10.0 QUALITY ASSURANCE RECORDS

The following are retained as Quality Assurance records:

- Microsoft ACCESS database ICTFDB.mdb

Calibration records governed by this TIP shall be maintained in the Microsoft ACCESS database and on a backup copy.

11.0 ASSOCIATED ACTIVITY AND TIPS

This TIP can be used in other activities of the SIP "Metal Barrier Selection and Testing" (SIP-CM-01, WBS # 1.2.2.5.1). In particular, it may be used in:

- Activity E-20-50, "Long Term Corrosion Studies"

Associated TIPs include:

- TIP-CM-04, "User-Calibration of Mettler AT200 Analytical Balance
- TIP-CM-05, "User-Calibration of Fowler Ultra-Cal Mark III Digital Caliper